1247-0851-6V

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

#24

IN RE APPLICATION OF: :

YVES NAOUMENKO ET AL. : EXAMINER: FERGUSON, L.

SERIAL NO: 09/498,363 :

RCE FILED: Herewith : GROUP ART UNIT: 1774

FOR: LAMINATED GLAZING WITH HIGH CRASH TEST RESISTANCE

## APPEAL BRIEF UNDER 37 C.F.R. 1.192

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Appellants herein appeal the final rejection as follows:

## REAL PARTY IN INTEREST

The real party in interest is Saint Gobain Vitrage of Courbevoie, France.

## RELATED APPEALS AND INTERFERENCES

The appeal filed on June 11, 2002 has been abandoned in favor of the present appeal.

## STATUS OF CLAIMS

Claims 1-7 and 10-19 are pending and are finally rejected. Claims 8 and 9 have been cancelled.

## STATUS OF AMENDMENTS

All amendments have been entered.

## SUMMARY OF THE INVENTION

It is known that a laminated glazing can comprise first and second sheets, in which the first sheet is offset in relation to the second sheet to form an exposed edge portion of the first sheet. This is shown in U.S. patent 5,132,162 to DePaoli and presents a peripheral thinning of the glazing, which allows it to be installed flush in a body contoured for flush installation of a monolithic sheet of glass, but results in inferior crash test resistance when the vehicle strikes an obstacle under standardized conditions (page 2, lines 5-12).

According to a feature of the invention, the strength of the glazing is enhanced by extending the intercalated adhesive layer binding the second sheet to the first sheet such that the intercalated adhesive layer extends over a portion of at least the exposed edge portion of the first sheet, and at least partially covering the intercalated adhesive layer at the exposed edge by an intermediate element. The cement element that secures the glazing to the body is then at least partially adhered to the intermediate element. For example, as illustrated in the non-limiting embodiment of the figures, the intermediate element 4 covers the exposed portion of the intercalated adhesive layer 3, and the cement element 6 which secures the glazing to the body is at least partially adhered to the intermediate element 4. This permits reinforcing the connection of the glazing to the frame, in particular in shock situations (page 3, lines 4-5).

## ISSUES

The sole issue to be considered on appeal is whether 1-7 and 10-19 are obvious over DePaoli in view of U.S. patent 5,137,770 to Rothe et al.

## GROUPING OF CLAIMS

Claims 1-4, 10-13 and 17-19 stand or fall together. Claims 5-7 stand or fall together. Claim 14 stands or falls alone. Claims 15-16 stand or fall together.

## ARGUMENT

Claims 1-7 and 10-19 stand rejected under 35 U.S.C. § 103 as being obvious over DePaoli in view of Rothe et al. All of these claims recite an intercalated adhesive layer extending over at least a portion of an exposed edge portion of a transparent sheet, which exposed edge is provided by an offset, together with an intermediate element at least partially covering the intercalated layer at the exposed edge, and a cement element at least partially adhered to the intermediate element. This is not taught by the applied references.

DePaoli discloses a glazing useful for aircraft windows wherein rigid glass sheets 18 and 19 are connected by interlayers 24-26. All of these layers have essentially the same dimensions, and so there is no offset or "exposed edge portion" between these layers. The glass sheet 17, on the other hand, is adhered to the glass sheet 18 by interlayers 22 and 23, and has a smaller dimension than the glass sheet 18, thereby forming an exposed edge portion of the glass sheet 18.

DePaoli thus discloses a laminated glazing possessing an exposed edge portion. However, the similarities between DePaoli and the claimed invention here end. DePaoli lacks any description of the intercalated adhesive layer binding the sheets *extending over at*

*least a portion of the exposed edge portion*. Rather, Figure 4 of DePaoli clearly shows that the interlayers 22 and 23 do not extend onto the exposed edge portion. In the same way, DePaoli lacks the claimed intermediate element at least partially covering the (non-existent) intercalated adhesive layer at the exposed edge. Presumably, a cement element may be used to adhere the laminated glazing of DePaoli to a vehicle body, but there is no disclosure that such a cement element would cover the (non-existent) intermediate element.

The Examiner has specifically relied on lines 58-60 of column 3 of DePaoli to teach that an adhesive may be added to the interlayer to cause adhesion to the rigid sheets (Paper 11, paragraph 4). However, this is incorrect, lines 58-60 of column 3 do not teach that "an adhesive may be added to the interlayer to cause adhesion to the rigid sheets." Rather, lines 58-60 of column 3 merely describe that the power lead in strips may be "adhesive to the rigid sheet," i.e., adhered to the rigid sheet. This is shown in Figure 4 of the reference wherein the power lead in 28 is adhered to the rigid sheet 18. This does not suggest that the interlayers 22 and 23 should extend over a portion of the exposed edge portion, nor does it suggest an intermediate element at least partially covering the nonexistent extension of the layers 22 and 23, or that the cement element should be at least partially adhered to the nonexistent intermediate element. That is, DePaoli is completely lacking in the idea that the glazing may be strengthened by the use of an intermediate element cooperating with an extended portion of an intercalated adhesive layer extending at least partially onto the exposed edge portion.

Thus the Examiner's recognition that the difference between DePaoli and the claims is that DePaoli "does not teach that a cement can be adhered to the intermediate element for securing the glazing to the body" or the material of the intermediate element (*Id.*) understates the shortcomings of DePaoli. More fundamentally, DePaoli simply lacks any teaching of an intercalated adhesive layer extending over at least a portion of an exposed edge portion of a

transparent sheet, which exposed edge is provided by an offset, together with an intermediate element at least partially covering the intercalated layer at the exposed edge.

In the "response to Arguments" section of the final Office Action, the Examiner states that "Although DePaoli does not specifically show the interlayers covering the exposed edge portion, ... [i]t would have been obvious to one [of] ordinary skill on the art to adjust the interlayers so that they cover the exposed edge since provision of adjustability, where needed, involves only routine skill in the art." The examiner has thus recognized this additional flaw of DePaoli but dismisses it on the theory that providing the interlayer of DePaoli at the exposed edge (and, presumably, also providing an intermediate element at this location) is simply a choice of design. But the Examiner's dismissal of this significant shortcoming of DePaoli as being a choice of design ignores the fact that the weakness which necessitates the interlayer and intermediate element of the invention is due to the presence of the exposed edge.

The Examiner has relied upon the Rothe et al reference to "teach[es] the benefit of adding cement to a laminated glazing having glass panes for improvement of water tightness," and that it would have been "obvious to use the intermediate elements in Rothe et al in place of those used by DePaoli." *Id.* However, this modification is flawed for a variety of reasons.

Rothe et al discloses the attachment of a glazing to a frame 7 and, in particular, seeks to eliminate poor adhesion of a cement profile in a flush glazing (column 2, lines 57-63). Rothe et al describes that durable adhesive connections between glass bodies and other materials must withstand great mechanical stresses in the event of impact. The glass bodies can include laminated glass panes (column 1, line 17). A glass body is shown at 1 and has a peripheral edge covering 3 or 4 made of ceramic or a primer. A further layer of primer 5 is

placed over the primer layer 4, and cement profiles 2 are placed on the primer 5. Profiles of a second moldable cement 6 are applied between the profiles 2 and on the primer 5 for adhering the glazing 1 to the frame 7.

However, Rothe et al does not disclose first and second transparent sheets, in which the first sheet is offset in relation to the second sheet to form an exposed edge portion of the first sheet, the intermediate element being at the exposed edge, nor has the Examiner alleged that Rothe et al discloses an intermediate element at such an exposed edge. *There is no offset whatsoever in the single sheet glazing of Rothe et al.*

Thus, the Examiner has merely relied upon Rothe et al to teach adding cement to the offset structure present in DePaoli. Specifically, the Examiner has alleged that it would have been obvious "to use the intermediate elements of Rothe et al in place of those used by DePaoli." But as has already been described, *DePaoli is missing a description of an intermediate element at least partially covering an intercalated adhesive layer at an exposed edge.* Rothe et al also lacks an intermediate element at least partially covering an intercalated adhesive layer at an exposed edge; neither of the elements 4 and 5 mounted on the glass body 1 in Rothe et al at least partially covers an intercalated adhesive layer which binds the sheets of the glazing, and so Rothe et al cannot supply any of these necessary teachings which are missing from DePaoli.

In summary, DePaoli teaches only a laminated glazing possessing an exposed edge portion. It does not teach an intercalated adhesive layer extending at least partially over this exposed edge portion, nor does it teach an intermediate element at least partially covering the intercalated adhesive layer at the exposed edge, or a cement element which is at least partially adhered to the intermediate element at least partially covering an intercalated adhesive layer at an exposed edge. Rothe et al similarly does not supply the missing teachings of DePaoli.

The "intermediate elements" 4 and 5 of this reference do not at least partially cover an intercalated adhesive layer at an exposed edge provided by an offset between first and second sheets of the glazing, and the cement elements of this reference do not at least partially adhere to the (non-existent) intermediate element at least partially covering an intercalated adhesive layer. The claims therefore clearly define over any combination of these references.

Claim 14 further recites that the intermediate element is formed of either aluminum or stainless steel. The Examiner has alleged (*Id.*) that Rothe et al teaches the use of these materials at lines 1-6 of column 11. However, this portion of column 11 of Rothe et al merely describes that the "other material" can be any metal or metal alloy. The "other material" is defined at lines 1-2 of column 11 as being the element to which the glass body is cemented by the cement ("the glass body according to the invention can be cemented to a wide variety of other materials"). Thus, the noted portion of column 11 merely describes that the glass body can be cemented to a steel or aluminum vehicle body. In no case does Rothe et al teach the presence of an "intermediate element" conforming to the claims and being formed of aluminum or stainless steel.

Similarly, Rothe et al provides no teaching for an intermediate element formed of a resin containing reinforcing fillers, such as glass fibers and organic fibers (Claims 15 and 16). There is no description of this feature in the reference.

Finally, the Examiner alleges that "the intermediate element of Rothe et al shows the same intermediate elements as Applicant claims and provides the same tensile strength as instantly claimed." That is, the Examiner appears to be alleging that the claimed tensile strength of the dependent Claims 5-7 is inherent in light of the same intermediate element being disclosed. However, since, as has already been described, Rothe et al fails to disclose

the claimed intermediate element, there is no inherency as to the tensile strength of Claims 5-7.

For the above reasons, and because these dependent claims depend from Claim 1, they are also believed to clearly define over any combination of DePaoli and Rothe et al.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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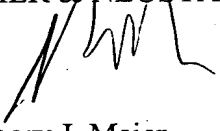

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APPENDIX

1. (Amended) Laminated glazing to be fitted upon a body, comprising:

a transparent first sheet;

a transparent second sheet, wherein the first sheet is offset in relation to the second sheet to form an exposed edge portion of the first sheet;

an intercalated adhesive layer binding said second sheet to said first sheet, wherein the intercalated adhesive layer extends over a portion of at least the exposed edge portion of the first sheet;

an intermediate element at least partially covering the intercalated adhesive layer at said exposed edge; and

a cement element adhered at least partly to said intermediate element for securing the glazing to a body.

2. Laminated glazing according to claim 1, wherein the intercalated adhesive layer covering said exposed edge is totally covered by the intermediate element.

3. Laminated glazing according to claim 1, wherein the intermediate element does not penetrate under the second sheet.

4. Laminated glazing according to claim 1, wherein the intermediate element penetrates under the second sheet.

5. Laminated glazing according to claim 1, wherein the intermediate element is formed of a material having a tensile strength in conformity with the standard ISO 527.

6. Laminated glazing according to claim 1, wherein the intermediate element is formed of a material having a tensile strength at least equal to 10,000 MPa.

7. Laminated glazing according to claim 1, wherein the intermediate element is formed of a material having a tensile strength at least equal to 15,000 MPa.

10. Laminated glazing according to claim 1, wherein the porosity of the material constituting the intermediate element corresponds to a water recovery at least equal to 30 g/day/$m^2$ for a 3 mm thick intermediate element.

11. Laminated glazing according to claim 1, wherein the porosity of the material constituting the intermediate element corresponds to a water recovery at least equal to 18 g/day/$m^2$ for a 3 mm thick intermediate element.

12. Laminated glazing according to claim 1, wherein the cement element is adhered to both the intermediate element and the first sheet.

13. Laminated glazing according to claim 1, wherein the cement element is adhered to only the intermediate element.

14. Laminated glazing according to claim 1, wherein the intermediate element is formed from at least one material from the group consisting of aluminum and stainless steel.

15. Laminated glazing according to claim 1, wherein the intermediate element is formed from at least one material from the group consisting of an epoxy and a phenolic, unsaturated polyester resin containing reinforcement fillers.

16. Laminated glazing according to claim 15, wherein the reinforcement fillers are comprised of at least one material from the group consisting of glass fibers and organic fibers.

17. Laminated glazing according to claim 15, wherein the reinforcement fillers are comprised of at least one material from the group consisting of fibers of carbon and aromatic polyamide.

18. Laminated glazing according to claim 10, wherein the intermediate element is formed of an electrical insulator.

19. Laminated glazing according to claim 1, wherein the body is an automobile body.